

AVERBUKH, B.Ya.

✓ The effect of agrotechnics on plant carbohydrate metabolism. B. Yu. Averbukh. *Vinodolie i Vinogradarstvo* 1955, No. 6, 18-19; *Referat. Zhur. Khim.* 1955, No. 3869. — Greatest susceptibility to change in carbohydrate metabolism is observed in young vine and old woody parts and lowest in roots. Favorable conditions of growth, well cultivated soil and close to soil fertilization increase the carbohydrate and starch content. B. S. Levine

ZAKHAROV, A.V., inzh.; AVERBUKH, D.I., inzh.

Review of V.V. Dubrovskii's book "Locating underground  
waters for the water supply of power engineering systems."  
Elek. sta. 35 no.3:91 Mr '64. (MIRA 17:6)

1. AVERBUKH, D. M.
2. USSR (600)
4. Sugar Industry-Accounting
7. Organizing socialist competition for lowering production cost in each separate operation.  
Sakh. prom. 26 No. 11, 1952

9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

AVERBUKH, D.M.

Operation of sugar refineries during the first half of the year.  
Sakh.prom. 31 no.7:44-46 J1 '57. (MLRA 10:8)

1.Veselo-Podolyanskiy sakharnyy zavod.  
(Sugar industry)

S/058/61/000/010/099/100  
A001/A101

24,1600

AUTHORS: Averbukh, D.Ya., Pokatilov, Ye.P.

TITLE: Quantum theory of ultrasonic resonance

PERIODICAL: Referativnyy zhurnal, Fizika, no. 10, 1961, 336, abstract 10Zh455  
("Uch. zap. Kishinevsk. un-t", 1960, v. 55, 155 - 162)

TEXT: This is a short mathematical article. The authors discuss the motion of electrons in a magnetic field in the presence of acoustic waves, probability of transitions in discrete spectrum, and absorption of ultrasonic energy.

[Abstracter's note: Complete translation]

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AVERBUKH, D.Ya.

At a republican conference "Design, assembly, and use of  
an active protection of gas pipelines from corrosion" in  
Minsk. Zashch.met. 1 no.6:733 N-D '65.

(MIRA 18:11)

AVERBUKE, E.Sh., inzh.; BOCHANOV, Ye.Ye., inzh.; GROYSMAN, A.D., inzh.;  
KUPERMAN, M.A., inzh.

Automatic control of hopper loading. Mekh. i avtom. proizvod. 19  
no.3:19-22 Mr '65. (MIRA 18:4)

AVERBUKH, F. KH.

Founding

Mechanization of form opening in conveyor foundry shops. Lit. proizv. No 8, 1952.

Monthly List of Russian Accessions, Library of Congress  
December 1952 UNCLASSIFIED



AUTHORS: Averbukh, G. L., and Lur'ye, Z. Ya., Engineers SOV/91-59-2-21/33

TITLE: A Diagram of an Automatic Switch-In of Reserve Current  
(Skhema avtomaticheskogo vvoda rezerva)

PERIODICAL: Energetik, 1959, Nr 2, p 29 (USSR)

ABSTRACT: In this article, the authors criticize a few shortcomings of a diagram of the automatic switch-in of reserve current, suggested by Engineer S. P. Bakumenko and published in Energetik, 1958, Nr 1. In its place they introduce another more reliable diagram. There is one diagram.

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SOV/110-59-5-3/25

AUTHORS: Averbukh, G.L., Engineer, Kogan, I.Ya., Engineer and  
Lur'ye, Z.Ya., Engineer

TITLE: The Selection of Automatic Cutouts Series A 3100 for  
Protecting the Circuits of Three-Phase Squirrel-Cage  
Motors (Vybor ustanovochnykh avtomatov serii AZ100 dlya  
zashchity tsepay trekhfaznykh dvigateley s korotkozam-  
knutym rotorom)

PERIODICAL: Vestnik elektropromyshlennosti, 1959, Nr 5, pp 12-15 (USSR)

ABSTRACT: IT is most important to select correctly the rated currents  
and trip settings of protective devices for squirrel-  
cage motors. It is usual to make such selection on the  
basis of continuous operation with a limited number of  
starts per hour. This article gives a method of selecting  
the rated current of the tripping device protecting a  
three-phase squirrel-cage motor operating on a repeated  
short duty cycle with a large number of starts per hour.  
The method is based on the use of the experimental heating  
curve of the thermal element of the trip and on its  
current/time characteristics. Since the thermal element is

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The Selection of Automatic Cytouts Series A 3100 for Protecting  
the Circuits of Three-Phase Squirrel-Cage Motors

not a uniform body, the experimental heating curve cannot be expressed by a normal exponential equation. The experimental heating curve, shown in Fig 1, may be resolved into two sections of different time-constants. The first section is from the origin to the knee, with a heating time of the order of 2-3 minutes, and the second section is the rest of the curve. Considering the case of an automatic protective device type A3120 operating with a squirrel-cage motor started 30 times an hour, the cycle time will be 2 minutes and, since this is shorter than the first section of the heating curve, the heating calculations that follow need only be related to this part of the curve. Formula (1) is then given as an approximation to the first part of the heating curve and the method of determining the time constant is explained. The heating curve of the thermal element with a repeated short cycle is shown in Fig 2. The three repeated sections of the curve are: starting time, running time and idling time. After a certain number of operations an

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equilibrium condition is reached in which the heat evolved in the thermal element during the cycle is equal to that given out to the surroundings. When this condition is reached, the maximum temperature at the end of a start, corresponding to point A on the graph, should be somewhat below the operating temperature of the trip. The trip is calibrated so that it just does not operate at 110% rated current. To leave some margin of safety, the calculation is made for a maximum temperature rise at point A, equal to the steady-state temperature rise of the thermal element with 105% rated current. In order to determine the permissible overload rating of the thermal element for a given operating cycle, the cyclic heating curve of the element when the equilibrium condition has been reached is then considered. Equations are derived for the three sections of this heating curve and then are combined together to obtain the relationship between the operating time and the overload factor of the trip given in expression (11). The point of intersection between a

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The Selection of Automatic Cutouts Series A 3100 for Protecting  
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curve constructed from expression (11) and the current/  
time characteristic of the trip gives the maximum  
permissible overload rating of the trip. By constructing  
a number of such points for different operating cycles as  
shown in Fig 3, the curve of overload factor as function  
of number of operating cycles per hour is obtained and  
shown in Fig 4. These curves are used to select the rated  
current of the automatic tripping device when operating  
with a given number of cycles per hour. A numerical  
example is then worked out for automatic protective  
equipment type A3124 with a rated trip current of 15A and  
the results are plotted in Fig 7 and 8. There are  
8 figures and 1 table.

SUBMITTED: 21st July 1958

Card 4/4

AVERBUKH, G.L.; SOLOV'YEVA, M.S., kand.med.nauk

On K.N.Zhmakin's article "Basic principles in the treatment of inflammatory diseases of the female genitalia." Sov.med. 25 no.1: 140-141 Ja '61. (MIRA 14:3)

1. Iz ginekologicheskoy bol'nitsy No.29 g.Gor'kogo (glavnyy vrach G.L.Averbukh).  
(GENERATIVE ORGANS, FEMALE DISEASES)

AVERBUKH, G.L.,

Extrauterine pregnancy according to data from the Gynecology  
Department of the Gorkiy City Hospital No.29. Sbor, nauch. rab.  
Kaf. akush. i gin. GMI no.1:193-195 '60. (MIRA 15:4)

1. Glavnyy vrach bol'nitsy No.29 g. Gor'kogo.  
(PREGNANCY, EXTRAUTERINE)

AVERBUKH, I. D.

USSR/Mining

Coal

Electric Power Stations

Feb 49

"Power Factor of the Korkino Coal Mine," Docent S. A. Volotovskiy, Cand Tech Sci,  
I. D. Averbukh, Asst, Sverdlovsk Mining Inst imeni V. V. Vakhrushev, 3 pp

"Ugol'" No 2

Discusses results of an investigation conducted by Sverdlovsk Mining Inst imeni Vakhrushev to determine power consumption of basic equipment of the Korkino Coal Mines. Electrical measurements clarified reasons for a low power factor of the mines' electric power system. Determined power factors of basic current collectors of all Korkino collieries. Action was taken to decrease the cost of power. Gives diagrams and table of experimental results.

PA 48/49T80



AVERBUKH, I. D.; SVERDEL', I.S.

Standardizing power consumption in dry magnet separation of iron ore.  
Gor. zhur. 126 no. 6, 1952.

SO: MLRA. September 1952.

Translation from: Referativnyy zhurnal, (Geologiya, 1957, Nr 4,  
p 211 (USSR) 15-57-4-5596D

AUTHOR: Averbukh, I. D.

TITLE: Parameters of Rolling Stock Used in Transportation  
by Contact Electric Trains in Coal Mines (Vyor  
parametrov podvizhnogo sostava pri podzemnoy otkatke  
kontaktnymi elektrovozami v kamennougol'nykh  
shakhtakh)

ABSTRACT: Bibliographic entry on the author's dissertation for  
the degree of Candidate of Technical Sciences,  
presented to Sverdl. gorn. in-t (Sverdlovsk Mining  
Institute), Sverdlovsk, 1956

ASSOCIATION: Sverdl. gorn. in-t (Sverdlovsk Mining Institute)  
Card 1/1

AVKREBUKH, I.D., assist.

Method of determining the maximum allowable train weight in underground electric locomotive haulage. Izv. vys. ucheb. zav.; gor. zhur. no.1:106-114 '58. (MIRA 11'5)

1. Sverdlovskiy gornyy institut.  
(Mine railroads) (Electric locomotives)

DEMIN, A.M., kand. tekhn. nauk; KOKH, P.I.; CHERTKOV, V.K.; VASIL'YEV, M.V., kand. tekhn. nauk; YEFIMOV, I.P.; KMITOVENKO, A.T., dots.; PRISEDSKIY, G.V., inzh.; DUNAYEVSKIY, Yu.N.; VOLOTKOVSKIY, S.A., doktor tekhn. nauk; KUR'YAN, A.I., kand. tekhn. nauk; MAYMIN, A.I.; MIROSHNIK, A.M.; PETROV, I.P.; TURYSHEV, B.F.; SHISHKOV, A.I.; AVERBUKH, I.D., inzh.; VARSHAVSKIY, A.V.; KRYUKOV, D.K.; LUKAS, V.A.; MINEYEV, V.A.; SMIRNOV, A.A., otv. red.; LYUBIMOV, N.G., red. izd-va; MAKSIMOVA, V.V., tekhn. red.

[Handbook for the mechanic in a coal pit] Spravochnik mekhanika ugol'nogo kar'era. Moskva, Gosgortekhnizdat, 1961. 639 p.

(MIRA 15:12)

(Coal mining machinery—Handbooks, manuals, etc.)

AVERBUKH, I.D., starshiy prepodavatel'; KOMLEV, V.P., assistant

Methods of investigating vagrant currents in mines. Izv.vys.ucheb.zav.;  
gor.zhur. no.6:67-72 ' 58. (MIRA 12:1)

1. Sverdlovskiy gornyy institut.  
(Electric currents, Eddy) (Mining engineering)

DEMIN, A.M., kand. tekhn. nauk; CHERTKOV, V.K.; VASIL'YEV, M.V.,  
 kand. tekhn. nauk; YEFIMOV, I.P.; KOKH, P.I.; KMITOVENKO, A.T.,  
 dots.; PRISEDSKIY, G.V., inzh.; DUNAJEVSKIY, Yu.N.; VOLOTKOVSKIY,  
 S.A., prof., doktor tekhn. nauk; KUR'YAN, A.I., kand. tekhn.  
 nauk; MAYMIN, S.R., kand. tekhn. nauk; MIROSHNIK, A.M., kand.  
 tekhn. nauk; PETROV, I.P., kand. tekhn. nauk; TURYSHV, B.F.,  
 kand. tekhn. nauk; SHISHKOV, A.I., kand. tekhn. nauk;  
 AVERBUKH, I.D., inzh.; VARSHAVSKIY, A.V.; KRYUKOV, D.K.; LUKAS,  
 V.A.; MINEYEV, V.A.; SMIRNOV, A.A., otv. red.; LYUBINOV, N.G.,  
 red. izd-va; MAKSIMOVA, V.V., tekhn. red.

[Handbook for the operator and mechanic of open-pit mine equip-  
 ment] Spravochnik mekhanika ugol'nogo kar'era. Moskva, Gos.  
 nauchno-tekhn. izd-vo lit-ry po gornomu delu, 1961. 639 p.

(MIRA 15:3)

(Strip mining—Equipment and supplies)  
 (Coal mining machinery) (Electricity in mining)

DEMIN, A.M., kand. tekhn. nauk; CHERTKOV, V.K.; VASIL'YEV, M.V.,  
kand. tekhn. nauk; YEFIMOV, I.P.; KOKH, P.I.; KMITOVENKO, A.T.,  
dots.; PRISEDSKIY, G.V., inzh.; DUNAYIVSKIY, Yu.N.; VOLOTKOVSKIY,  
S.A., prof., doktor tekhn. nauk; KUR'YAN, A.I., kand. tekhn.  
nauk; MAYMIN, S.R., kand. tekhn. nauk; MIROSHNIK, A.M., kand.  
tekhn. nauk; PETROV, I.P., kand. tekhn. nauk; TURYSHCHEV, B.F.,  
kand. tekhn. nauk; SHISHKOV, A.I., kand. tekhn. nauk;  
AVERBUKH, I.D., inzh.; VARSHAVSKIY, A.V.; KRYUKOV, D.K.; LUKAS,  
V.A.; MINEYEV, V.A.; SMIRNOV, A.A., ctv. red.; LYUBIMOV, N.G.,  
red. izd-va; MAKSIMOVA, V.V., tekhn. red.

[Handbook for the operator and mechanic of open-pit mine equip-  
ment] Spravochnik mekhanika ugol'nogo kar'era. Moskva, Gos.  
nauchno-tekhn.izd-vo lit-ry po gornomu delu, 1961. 639 p.

(MIRA 15:3)

(Strip mining—Equipment and supplies)  
(Coal mining machinery) (Electricity in mining)

AVERBUKH, I.D., starshiy prepodavatel'; PETROV, Yu.S., dotsent; TURYSHEV,  
B.F., dotsent; TALALAYENKO, V.A., inzh.

Protection form electrocution when the excavator bucket touches  
the contact wire. Izv. vys. ucheb. zav.; gor. zhur. 6 no.6:130-  
137 '63. (MIRA 16:8)

1. Sverdlovskiy gornyy institut imeni V.V. Vakhrushева.  
Rekomendovana kafedroy gornoy elektrotekhniki.  
(Excavating machinery—Safety applicances)



AYERBUKH, I.G.

Introduce the bonus system for malt-economizing. Spirt. prom. 23 no.4:  
29 '57. (MIRA 10:5)

1. Beshetskiy spirtovoy zavod.  
(Bonus system) (Malt)

L 08718-67 EWT(d)/EWP(o)/EWP(v)/EWP(k)/EWP(l) IJP(q)  
 ACC NR: AP6032505 SOURCE CODE: UR/0413/66/000/017/0072/0072

INVENTOR: Averbukh, I. I.; Kalinin, V. A.; Pranitskiy, A. A.; Stukel'man, L. L. 27  
 B

ORG: none

TITLE: Ultrasonic resonance method of thickness inspection. Class 42, No. 185496  
 [announced by the All-Union Scientific Research Institute for the Development of  
 Methods of Nondestructive Quality Control (Vsesoyuznyy nauchno-issledovatel'skiy  
 institut po razrabotke nerazrushayushchikh metodov kontrolya materialov)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 17, 1966, 72

TOPIC TAGS: thickness inspection, ultrasonic resonance, ultrasonic inspection

ABSTRACT: This Author Certificate introduces an ultrasonic resonance method of thick-  
 ness inspection. To obtain the deviation of the measured thickness from the nominal  
 thickness, the ultrasonic generator's frequency is varied within the range determined  
 by the thickness limits, thereby ensuring the occurrence of resonance only at a  
 frequency corresponding to a given thickness.

SUB CODE: 11, 13/ SUBM DATE: 31Mar65/

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UDC: 531.717.11

*AVERBUKH, I. Ya.*

USSR/Virology - Bacterial Viruses

E-1

Abs Jour : Referat Zhurn - Biol. No 16, 25 Aug 1957, 68224

Author : Shevchenko, F.I., Averbukh, I.Ya.

Title : On Preservation of Activity of Dysentery Bacteriophage  
After Prolonged Storage.

Orig Pub : Za Sots. Edravookhr., Usbekistana, 1956, No 3, 57-59

Abstract : Upon prolonged storage (12-13 years) of 7 races of polyvalent dysentery phage in darkness at room temperature under Middle-Asian conditions (Samarkand), its activity was conserved to the extent of 30-50% of its initial titer.

(Editor's note) The authors' conclusion about the percentage of preserved phage does not correspond to the experimental data shown by them. As is evident from the table the titer of phage which was active in Flexner's culture, at the examination after 12 years and 10 months, was lowered from  $10^{-8}$  to  $10^{-4}$ , which corresponds not to 50% of preservation of the initial titer, but only to

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0.01%.

SULEYMANYAN, M.S.; AVERBUKH, I.Ya.

Effect of pilocarpine on the accumulation of agglutinins  
in the blood of animals during immunization. Trudy Tash.  
NIIVS 5:159-164'62. (MIRA 16:10)  
(AGGLUTININS) (PILOCARPINE -- PHYSIOLOGICAL EFFECT)

AVHREBUKH, I.Ye.; BULKIN, N.D.; POPPE, K.K.

Effectiveness of the use of large doses of strychnine in barbiturate poisoning. Vrach.delo no.3:311-313 Mr '60. (MIRA 13:6)

1. Tret'ya psikhonevrologicheskaya bol'nitsa, Leningrad.  
(BARBITURATES--TOXICOLOGY) (STRYCHNINE)

AVERBUKH, I. Yo. Cand Med Sci -- "Postnatal psychoses. Etiology, clinic, and nosological affiliation." Len, 1961 (1st Len Med Inst im Academician I. P. Pavlov). (KL, 4-61, 207)

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AVERBUKH, I.Ye.

Mental and physical condition of women in the postnatal period and postnatal psychoses. Vop. psikh. i nevr. no.5:193-201 '59.

(MIRA 14:5)

1. Iz 3-y Leningradskoy psikhonevrologicheskoy bol'nitsy imeni Skvortsova-Stepanova (glavnyy vrach - N.D.Bulkin).

(WOMEN--DISEASES)

(PSYCHOSES)

AVERBUKH, I.Ye.

Puerperal psychoses, their etiology, clinical aspects and nosological classification. Vop.psikh.i nevr. no.7:200-212 '61.  
(MIRA 15:8)

1. ~~1961~~ Leningradskoy psikhonevrologicheskoy bol'nitsy (glavnyy vrach N.D.Bulkin).

(PSYCHOSES) (PUERPERIUM)



AVERBUKH, L.A. (Kiyev)

Some results of studying the number of people applying for medical services. Vrach.delo no.7:743-745 J1 '57. (MLPA 10:8)

1. Ukrainskoe nauchno-issledovatel'skoye byuro sanitarnoy statistiki  
Ministerstva zdavookhraneniya USSR  
(MEDICAL STATISTICS)

AVERBUKH, L.A. (Kiyev)

Hospitalization of patients with different diseases. Sov.zdrav.  
18 no.12:21-24 '59. (MIRA 13:4)  
(HOSPITALS)

AV. MRBUKH, I.A. (Kiyev)

Level of general mortality in individual diseases. Vrach.delo  
no.4:405-409 Ap '60. (MIRA 13:6)

1. Otdel organizatsii zdravookhraneniya Ukraineskogo nauchno-  
issledovatel'skogo instituta kommunal'noy gigiyeny.  
(DISEASES--REPORTING)

AVERBUKH, L.A. (Kiyev)

Morbidity of the adult population of Vinnitsa; material from a special processing of data on medical treatment. Sov.zdrav. 19 no.2:48-51 '60.  
(MIRA 13:5)

1. Iz otdela organizatsii zdavookhraneniya Ukrainского instituta kommunal'noy gigiyeny.  
(VINNITSA--DISEASES--REPORTING)

AVERBUKH, L.A.

Characteristics of disease incidence in relation to age and sex.  
Vrach. delo no.5:128-131 My '61. (MIRA 14:9)

1. Otdel organizatsii zdravookhraneniya Ukrainского nauchno-  
issledovatel'skiy instituta kommunal'noy gigiyeny.  
(DISEASES---REPORTING)

AVERBUKH, L. A. (Kiyev)

Some data on the shifts in morbidity among the adult population of Kiev for a 10-year period. Vrach., delo no.7:115-120 J1 '62.  
(MIFA 15:7)

1. Otdel organizatsii zdravookhraneniya Ukrainskogo nauchno-issledovatel'skogo instituta kommunal'noy gigiyeny.

(KIEV---DISEASES---REPORTING)

TERENT'YEV, V.S., kand.tekhn.nauk; AVERBUKH, L.D., inzh.; TRET'YAKOV, A.V.,  
kand.tekhn.nauk

Using hydropneumatic servo systems for strip centering along  
a machine unit axis. Spor. st. NIIMIAZHMASHa Uralskshzavoda  
no.6:140-145 '65. (MIRA 18:11)

AVERBUKH, L.S., inzh.

Mechanized washing of trucks. Gor. khoz. Mosk. 35 no.1:39-40 Ja '61.  
(MIRA 14:2)

(Motortrucks—Maintenance and repair)



ACC NR: AP6025300 (N) SOURCE CODE: UR/0416/66/000/007/0067/0070

AUTHOR: Averbukh, M. (Engineer); Lobanov, D. (Engineer, Lieutenant colonel)

ORG: none

TITLE: Transportation of packaged cargoes by the Soviet Navy

SOURCE: Tyl i snabzheniye sovetskikh vooruzhennykh sil, no. 7, 1966, 67-70

TOPIC TAGS: freight transportation, loading, unloading

ABSTRACT: Loading operations in the Soviet Navy represent about one-half of the expenses connected with the transportation of piece, bulk, and loose cargoes. The most labor-consuming are loading-unloading operations connected with piece cargoes which are usually handled manually. To reduce the costs, it is recommended that as much unpackaged freight as possible be eliminated and that mechanization be speeded up for loading-unloading operations for both piece and bulk cargoes. It is calculated that this will reduce costs by a factor of 5 to 6.5. Orig. art. has: 2 figures and 1 table. [DW]

SUB CODE: 15/

Card

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SOV/136-58-6-3/21

**AUTHORS:** Averbukh, M.A., Burnashev, A.A., Birger, G.I., Baysh, L.G., Zubkov, G.A., Zhiryakov, N.I., Isayev, D.V., Ovcharenko, Ye.Ya., Fromberg, A.B. and Shneyerov, M.S.

**TITLE:** New Means for Automatic Testing and Control in Non-ferrous Metallurgy (Novyye sredstva avtomaticheskogo kontrolya i regulirovaniya v tsvetnoy metallurgii)

**PERIODICAL:** Tsvetnyye Metally, 1958, Nr 6, pp 15 - 25 (USSR)

**ABSTRACT:** Many processes in non-ferrous metallurgy involve corrosive media and the Konstruktorskoye byuro (Design Bureau) Tsvetmetavtomatika (KB TsMA) have since 1955 been working on pneumatic control methods, which are especially suitable for such conditions. Other organisations named by the authors as some of those working in the same field are: Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics of the Ac. Sc. USSR), NIITeplopribor, TsLA of the "Energochermet" Trust and the "Tizpribor" Works. A wide range (Table 1) is covered by the pneumatic transducers, produced by the KB TsMA (Figures 1 and 2) in which use is made of a corrosion-resistant Soviet plastic. A series of corrosion-resistant valves have also been produced (Table 2), including a diaphragm type with a position indicator

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New Means for Automatic Testing and Control in Non-ferrous Metallurgy

(Figure 3). For the continuous analysis of hydro-metallurgical solutions, the KB TsMA in 1957 developed (Figure 4) an automatic polarographic concentration-meter, type KAP-225, with a transducer type DAPK-226: this device has been successfully used at the "Elektrotsink" Works for analysing for cadmium in zinc electrolyte and is based on alternating-current polarography. The KB TsMA have developed a series of radioactive methods, particularly for level indication over a wide (type URP) (Figure 5) and a relatively narrow (type URPR) (Figure 6) range. A radioactive density-meter, type PR-150, independent of the mineralogical and size composition of pulp over a wide range has been successfully tested at the Zolotushinskaya obogatitel'naya fabrika (Zolotushinskaya Beneficiation Works) (ranges 1.5-2.5 and 1-2 kg/litre). Work is proceeding on other radioactive meters including a moisture meter, for concentrates and similar materials. Based on corrosion-resistant, differential, thermoelectric anemometer (electrical circuit proposed by engineers V.A. Drozdov and A.M. Listov), a flowmeter for pure or air-diluted chlorine has been developed by the

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## New Means for Automatic Testing and Control in non-ferrous Metallurgy

KB TsMA; they have also developed an analyser (type GAKh-239) for chlorine which is accurate to  $\pm 3\%$  and these two instruments are to be used in an integrated automation system being devised for the magnesium industry. The KB TsMA have developed an automatic installation for (Figures 7 and 8) controlling a single pump in relation to the liquid level. Another recent activity of this organisation has been the development of the type ATV-229 overheating protective device (Figure 9) and a twelve-point temperature signalling device (Figure 10). The ATV-229 device is to be produced by the Tsvetmetpribor Works. In collaboration with the Institut gigiyeny truda i profzabollevaniy AMN SSSR (Institute of Work Hygiene and Occupational Diseases of the AMS USSR), the KB TsMA have developed a device (Figure 11) for continuous measurement and recording of mercury-vapour concentration in air in the range  $0.1 - 0.6 \text{ mg/m}^3$ . This instrument (IKRP-445) (Figure 11) also gives an alarm signal if the concentration becomes excessive and its range is being extended in both directions.

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New Means for Automatic Testing and Control in Non-ferrous Metallurgy

There are 11 figures.

ASSOCIATION: KB Tsvetmetavtomatika

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AUTHOR: Averbukh, M. A.

SOV/32-24-10-32/70

TITLE: The Use of the ~~SF~~-4 Spectrophotometer for Flame Spectrophotometry (Ispol'zovaniye spektrofotometra ~~SF~~-4 dlya plamennoy spektrofotometrii)

PERIODICAL: Zavodskaya Laboratoriya, 1958, Vol 24, Nr 10, pp 1252-1254 (USSR)

ABSTRACT: This apparatus may be used for this purpose as it has a monochromator and a recording device. The conversion of the apparatus from emission to absorption analysis and vice versa can be done within 3-5 minutes. To adopt the ~~SF~~-4 to flame photometry the light source must be removed and a gas burner must be put in its place. In the present case an illuminating gas with an air-blast was used for lower temperatures, and at higher temperatures an oxygen blast was used. A scheme of the apparatus for analyses at lower temperatures is given. The determination of potassium and sodium in electro-vacuum glasses is mentioned as an example. The sample is dissolved in a mixture of sulfuric acid and hydrofluoric acid and the solution is diluted to a concentration of 60-150 mg/l  $\text{Na}_2\text{SO}_4$  and 50-100 mg/l  $\text{K}_2\text{SO}_4$ . The mean error of the first determination was

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The Use of the SF-4 Spectrophotometer for Flame Spectrophotometry

about 1%. Taking into account the error in the decomposition the mean error of analysis amounts to about 3%. The duration of the photometric determination with an eight-fold determination of two elements takes about 2 hours. A comparative table of the results according to the analysis described and the chemical analysis is given. There are 2 figures and 1 table.

ASSOCIATION: Moskovskiy elektrolampovyy zavod (Moscow Incandescent Bulb Factory)

Card 2/2

S/032/61/027/003/024/025  
B101/B203

AUTHOR: Averbukh, M. A.

TITLE: Experience gained with the use of flame photometry for the control of production of electric vacuum devices

PERIODICAL: Zavodskaya laboratoriya, v. 27, no. 3, 1961, 358

TEXT: Examples are given for the use of flame photometry by means of an apparatus described earlier (Ref. 2: M. A. Averbukh, Zavodskaya laboratoriya, XXIV, 10, 1252 (1958)) for determining alkali metals and alkaline-earth metals in glass and other raw materials, further in photo-cells, emitters, photomultipliers, and electron tubes. 1) Determination of alkali metals in glass and raw materials. A 0.05 - 0.5 g weighed portion is treated with an  $H_2SO_4$  - HF mixture, evaporated, annealed, and dissolved in water. As all glass components, except for the alkalis, remain in the insoluble residue, alkali sulfate solutions can be used as standards. After six photometric measurements (15-20 min per alkali element to be tested, Li, Na, K), the mean error is 0.5 - 1%. The raw materials for glass production are analyzed in a similar manner. Card 1/2



Experience gained with the...

S 032/61/027/003/024/025  
B101/B203

2) Determination of Na, K, Cs in photocells. The emitting coat of the cathode is dissolved in 10-50 ml of water, and the three elements are determined by flame photometry. According to the author's opinion, this simple method should be widely used in plants of electric vacuum devices. 3) Determination of Ca, Ba, Sr, and Na in carbonates. Binary and ternary carbonates used for the production of oxide coats in electron tubes are controlled. The specimen is dissolved in HCl, and analyzed by flame photometry. Solutions of chlorides of the mentioned metals are used as standards. For the determination of Na (0.1 - 2%), the same standards can be used as for glass analysis. Ca, Ba, Sr are determined in a hot flame (oxygen-gas flame). Up to now, the weighed portion of carbonates had to be 0.1 - 0.5 g. With the use of the new flame photometer, which has been designed on the basis of the YM-2 (UM-2) monochromator, a weighed portion of 1-10 mg is sufficient. Besides, flame photometry can be used to determine alkali impurities in Rb, Mn (0.1 - 0.5%) and Cu (with the use of an oxygen-gas flame), and to analyze coats, wash wavers, etc. The method is simpler and saves time as compared with the chemical analysis. There are 2 Soviet-bloc references.

Card 2/2

AVERBUKH, M.A.

Error in spectral analysis connected with the nonlinearity of the  
characteristic curve of the photoplate. Zav.lab. 29 no.8:936 '63.  
(MIRA 16:9)

(Spectrum analysis)

BRANDER, A.I.; MASTYAYEV, V.Ya.; AVERBUKH, M.A.

An economical source for a d-c arc. Zav. lab. 31 no.2:253 '65.  
(MIRA 18:7)

1. Moskovskiy elektrolampovyy zavod.

LESHCHINSKAYA, Z.I.; AVERBUKH, M.A.; SELIVANOVA, N.M.

Solubility and thermodynamic properties of barium and strontium  
selenites. Zhur. fiz. khim. 39 no.8:2036-2038 Ag '65.  
(MIRA 18:9)

1. Moskovskiy khimiko-tekhnologicheskii institut imeni  
Mendeleeva.

05198  
SOV/142-2-3-6/27

9(2,9)

AUTHOR:

Averbukh, M.E.

TITLE:

The Generalization of the Circuit Theory for Helical Delay Systems

PERIODICAL:

Izvestiya vysshikh uchebnykh zavedeniy, Radiotekhnika, 1959, Vol 2, Nr 3, pp 307-315 (USSR)

ABSTRACT:

The author suggests a method for determining the distributed parameters of a helical conducting cylinder, which is co-axial with an external round wave-guide, in the absence of losses, based on the localization of transverse waves with subsequent application of a quasi-stationary method. The author obtained characteristic equations of an equivalent line coinciding with the dispersion equation of the system. The field distribution and the general dispersion equation of slow, normal waves in the system under consideration are shown. The possibility of generalizing the theory of electromagnetic circuits for processes occurring in microwave vibrators and lines was considered by M.S. Ney'man, (Ref.1). A number of other authors, (Ref.2,3,4), successfully used the electrical circuit equation for studying some important properties of

Card 1/2

05198  
SOV/142-2-3-6/27

The Generalization of the Circuit Theory for Helical Delay Systems

delay devices of the helical or finned conductor types. However, the possibility of using such equations was not founded and no methods for calculating substitute line parameters were given. Figure 1 shows the configuration of the conductors under consideration. The author expresses his gratitude for the scientific guidance received by Professor Doctor of Physical and Mathematical Sciences, P.V. Golubkov, Candidate of Physical and Mathematical Sciences, A.I. Shtyrkov and others. The publication of this paper was recommended by the Kafedra obshchey fiziki Saratovskogo gosudarstvennogo universiteta, imeni N.G. Chernyshevskogo (Chair of General Physics of the Saratov State University, imeni N.G. Chernyshevskiy). There are 1 diagram, 1 block diagram, 2 graphs and 14 references, 6 of which are Soviet, 7 American and 1 German.

SUBMITTED: November 27, 1958 (July 17, 1958)

Card 2/2

L 09967-67 ENT(1) GD  
ACC NRI AT6022274

SOURCE CODE: UR/0000/66/000/000/0040/0053

AUTHOR: Averbukh, M. E.

ORG: none

TITLE: Calculation of certain dispersion properties in a septate waveguide with a ferrite filler

SOURCE: Vsesoyuznaya nauchnaya sessiya, posvyashchennaya Dnyu radio. 22d, 1966. Sektsiya kvantovoy elektroniki. Doklady. Moscow, 1966, 48-53

TOPIC TAGS: waveguide, waveguide propagation, phase shifter, ferrite, electromagnetic wave dispersion, dispersion equation

ABSTRACT: Dispersion equations for round septate waveguides are derived. The waveguides contain a central ferrite spindle coinciding with the axis of the structure. This type of waveguide produces an axisymmetrical dominant wave and compensates for the Faraday rotation of the plane of polarization. Such rotation for the dominant wave  $H_{11}$  occurs in relation to phase shift in ferrite phase shifters. Figure 1 shows the structure under consideration. The ferrite spindle has a radius  $r_0$ , dielectric constant  $\epsilon_0$  and the permeability tensor

$$\vec{\mu} = \begin{vmatrix} \mu & -jk & 0 \\ jk & \mu & 0 \\ 0 & 0 & \mu_z \end{vmatrix}$$

Card 1/3

L 09967-67  
ACC NR: AT6022274

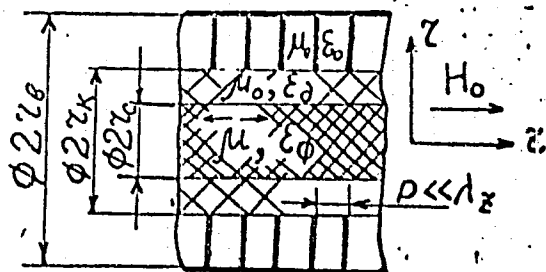


Fig. 1.

The spindle is maintained in its position by a dielectric tube having inner radius  $r_k$ , dielectric constant  $\epsilon_d$ , and outside radius  $r_0$ . For the sake of simplicity the waveguide is assumed to be monoharmonic, i. e., the structure period  $p \ll \lambda_z$ . The losses in walls and filling are neglected. The dispersion equation is derived by combining Maxwell equations for separate regions of the structure

$$\begin{aligned} (k_0 r_c) \frac{\epsilon_d}{\epsilon_0} \ln(k_0 r_0, k_0 r_k) \left\{ (\gamma r_c) \frac{\epsilon_d}{\epsilon_0} \left[ \frac{(\gamma r_c) \Delta(x_i^2)}{Tnh(\gamma r_c, \gamma r_k)} + \right. \right. \\ \left. \left. + (\Gamma_1^2 OI_1 - \Gamma_2^2 OI_2) - (\gamma r_c) (\Gamma_2^2 QI_1 - \Gamma_1^2 OI_2) + \Delta(x_i^2) OI_1 OI_2 Tnh(\gamma r_c, \gamma r_k) \right] - \right. \\ \left. - ch(\gamma r_c, \gamma r_k) \frac{\epsilon_d}{\epsilon_0} (\gamma r_c)^2 [(\gamma r_c) \Delta(x_i^2) + (\Gamma_1^2 OI_1 - \Gamma_2^2 OI_2) \times \right. \end{aligned}$$

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1. 09967-67  
ACC NR: AT6022274

$$\times \text{Tnh}(\gamma r_c, \gamma r_c) - (\gamma r_c) \left[ \frac{\gamma r_c}{\text{Tnh}(\gamma r_c, \gamma r_c)} (\Gamma_2^2 OI_1 - \Gamma_1^2 QI_2) - \frac{\text{Tnh}(\gamma r_c, \gamma r_c)}{\text{Tnh}(\gamma r_c, \gamma r_c)} OI_1 OI_2 \Delta(x_i^2) \right] = 0.$$

where  $k_0 = \frac{2\pi}{\lambda_0} = \frac{\omega}{c}$  is the wave number in free space

$$\text{Tnh}(x, y) = \frac{I_1(y) k_1(x) - I_1(x) k_1(y)}{I_1(y) k_0(x) + I_0(x) k_1(y)}$$

$$\text{ch}(x, y) = \frac{I_0(x) k_0(y) - I_0(y) k_0(x)}{I_1(x) k_1(y) - I_1(y) k_1(x)}$$

$I, k$  is the modified Bessel functions also contained in

$$OI_i = x_i \frac{I_0(x_i)}{I_1(x_i)}$$

also

$$\Delta(x_i^2) = x_i^2 - x_j^2; x_i = (\gamma_i r_c), i = 1, 2; \Gamma_i^2 = (\gamma_i r_c)^2;$$

The dispersion equations for the special case when the waveguide is wholly filled with ferrite is also derived. An example for calculation of dispersion for a waveguide is included with illustrating graphs and a table. Orig. art. has: 3 figures, 1 table, 2 formulas.

SUB CODE: 09,17,20,12/

SUBM DATE: 11Apr66/

ORIG REF: 004/

OTH REF: 002

Card 3/3

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AVERBUKH, M. I.; MAKUSHENKO, V. G.; GUSEV, A. V.

Fundator, V. I.

Fouring systems that unavoidably fill up the slag remover and V. I. Fundator's "critique."  
Reviewed by M. I. Averbukh, V. G. Makushenko, A. V. Gusev. Lit. proiz. no. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 195~~7~~, Uncl.

2

AYERBUKH, M.L.; RYBAS, I.I.; TROYAN, G.A.; SHIL'MAN, R.M.

Diagnosis of schizophrenia by means of the complement fixation reaction. Lab.delo 6 no.3:6-10 My-Je '60. (MIRA 13:7)

1. Kafedra psikhatrii (sav. - prof. G.Yu. Malis) i kafedra mikrobiologii (sav. - dotsent I.I. Rybas) Chernovitskogo meditsinskogo instituta (dir. - dotsent N.M. Kovalov) i Chernovitskoy psikhonevrologicheskoy bol'nitsy (glavnyy vrach N.F. Grubins). (SCHIZOPHRENIA) (COMPLEMENT FIXATION)

1ST AND 2ND ORDERS										170 AND 4TH ORDERS									
AVERBUKH, M.M.																			
PROCESSES AND PROPERTIES INDEX																			
<p><b>S</b></p> <p><b>The Determination of Manganese in Malleable and Gray Cast Iron with the Spectrograph.</b> M. M. Averbukh and I. I. Erina. (Zavodskaya Laboratoriya, 1947, vol. 13, pp. 181-184; Chemical Abstracts 1948, vol. 42, Apr. 20, col. 2542). Comparison of manganese lines in the 4760, 6020, and 4451 regions with neighbouring iron lines permits estimates of manganese concentrations in the range 0.1-1.0%. An analysis takes 2 min; agreement with chemical analysis is excellent.</p>																			
<p>COMMON ELEMENTS</p> <p>COMMON VARIETIES INDEX</p>																			
<p>ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																			
<p>1ST AND 2ND ORDERS</p>										<p>170 AND 4TH ORDERS</p>									

1ST AND 2ND ORDER		PROCESS AND PROPERTY INDEX		3RD AND 4TH ORDER																																																			
AVERBUKH, H-M.		7																																																					
<p>Determination of silicon in malleable and gray cast irons and steels with a steelscope. M. M. Averbukh, I. I. Brina, and I. G. Strel'tsov. <i>Zavodskaya Lab.</i> 14, 110-12 (1948).—The test specimen served as one of the sparking electrodes, and C steel contg. 0.20-0.34% Si and 0.4-0.6% Mn was the const. electrode. The dimensions of the const. electrode were 1.5-2.0 X 4.5-5.5 mm.; the spark-gap was 2.5 mm. Excitation source was a condenser spark in an ordinary set-up (transformer 220/12,000 v., current in primary circuit 3.5-4 amp., capacity 0.02 microfarad, self-induction coil 9.5 cm. in diam., distance between turns 0.5 cm.; in analyzing malleable cast iron, 16 turns were used and for gray cast iron 10 turns). For the lines N 6551.95 and Fe 6505.60 Å., equality of intensity is obtained after 1.5 min. of sparking. All analytical factors are retained within the interval of 15-18 turns for malleable and 9-12 turns for gray cast iron. If necessary, the self-induction should be varied until the intensities are equal. For Mn concn. greater than 1%, the relation of the intensities of the lines Si/Fe and S/N was somewhat increased. Cr, Ni, W, and V had no effect on the detn. of Si. Results with over 400 samples were satisfactory; in only one analysis the detn. was 0.8-0.9% instead 1.1-1.2%.</p> <p>H. Z. Kamlich</p>																																																							
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AVERBUKH, M. M.

PA 157T68

USSR/Metals - Steeloscopes  
Alloys, Nonferrous

Dec 49

"Quantitative Analysis of Nonferrous Alloys on a  
Steeloscope With a Photometric Eyepiece," M. M.  
Averbukh, I. I. Yerina, State All-Union Inst of  
Auto and Tractor Technol, 4 pp

"Zavod Lab" Vol XV, No 12

Describes construction and gives test results of  
photometric eyepiece used on VS-1 steeloscope to  
increase accuracy of analysis. Gives results of  
tests for Zn, Sn and Pb in OTS-6-6-3 bronzes, for  
Zn and Sn in BOTS-10-2 bronzes, and for Fe, Cu, Mg.

157T68

USSR/Metals - Steeloscopes  
(Contd)

Dec 49

and Si in piston alloy. Claims methods allow con-  
trol and correction of alloying process. Recommends  
immediate serial production of eyepieces.

157T68

*Averbukh, M.M.*

USSR/Optics -Optical Methods of Analysis. Instruments.

K-7

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 13138

Author : Averbukh, M.M., Ivantsov, L.M., Kandinov, A.V.

Inst : -

Title : Photoelectric Setup for High Speed Spectral Analysis, FEU-1

Orig Pub : Zavod. laboratoriya, 1954, 20, No 1, 57-62

Abstract : No abstract.

Card 1/1

24(7)

AUTHORS:

~~Averbukh, M. M.~~ Artsishevskaya, N. V., Belyayev, N. V.,  
Ierina, I. I., Pen'kov, D. I., Strel'tsov, I. G. SOV/48-23-9-24/57

TITLE:

New Photoelectric Spectroscopical Apparatus

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959,  
Vol 23, Nr 9, pp 1105 - 1107 (USSR)

ABSTRACT:

In the present paper the apparatus of the types FESA-4 and FESA-4M are described. The former consists of an arc generator of the type DG-2, a three-lens condenser system, the optical part of the spectrograph of the type ISP-52, the camera of the type UF-84, the collimator of the type UF-61 and a system for line separation with four outlet slits and four photoelectric cells of the type STsV-4. The instrument is automatized and has an error of less than 0.5%. A photograph of this apparatus is shown by figure 1. The second apparatus described here consists of four blocks, and differs from the first by the optical system and by the form of its construction (Fig 2). The instrument makes it possible to control the line intensities. The experiments carried out by means of both apparatus with two different materials are shown by two tables. There are 2 figures, 2 tables,

Card 1/2



New Photoelectric Spectroscopical Apparatus

SOV/48-23-9-24/57

and 1 Soviet reference.

ASSOCIATION: Nauchno-issledovatel'skiy institut tekhnologii avtomobil'noy  
promyshlennosti (Scientific Research Institute for the Tech-  
nology of the Automobile Industry)

Card 2/2

AVERBUKH, M.N., inzhener.

Volumetric weight of the peat layer being milled. Torf.prom.33 no.4:  
17-19 '56. (MIRA 9:9)

1. Lengi protorf.  
(Peat)

AVERBUKH, M.W., inzh.

Volume weight of the milled layer of a peat field. Torf.prom.  
36 no.4:19-24 '59. (MIRA 12:9)

1. Lengiprotorf.

(Peat)

LOBANOV, D.A.; AVERBUKH, M.N.

Universal loaders. Mashinostroitel' no.11:28-29 N '63.  
(MIRA 16:11)

AVERBUKH, M.N.; KUROCHKIN, A.Ye.; POBEREZHENYI, I.V.

Over-all mechanization of the loading and unloading of unitized cargo  
in sea harbors. Mor. sbor. 46 no. 5:65-71 My '63. (MIRA 17:1)

MIKHAYLOV, A.V. (Chitinskaya obl.); BEVZ, G.P. (Kiyev); GISIN, B.V.,  
(Alma-Ata); SANDLER, TS.M (Smy); AVERBUKH, M.P. (Leningrad);  
SHNIPOR, B.N. (Vinnitsa); ZAKHAROV, V.L. (Minsk); YASINOVYY,  
E.A. (Kuybyshev); VOSKRESENSKIY, S.N. (Kuybyshev)

Problems. Mat.v shkole no.4:94-95 J1-Ag '59.

(Geometry--Problems, exercises, etc.) (MIRA 12:11)

AVERBUKH, M.Ye.; LUGININA, I.G.; SMOGORZHEVSKIY, V.U.

Study of the electrical conductance of clinker minerals and cement.  
TSement 29 no.6:6-7 N-D '63. (MIRA 17:3)

1. Kazakhskiy tekhnologicheskiy institut.

AVERBUKH, N.I.

AVERBUKH, N.I.; VELICHKO, I.Ya.; AVRINSKIY, P.V., inzhener, redaktor;  
~~LEUTA~~, V.I., inzhener, redaktor.

[G.N. Zhelud', foundry molder] Formirovshchik G.N. Zhelud'. Kiev,  
Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry,  
[Ukr. otd-nie] 1953. 18 p. (MIRA 7:8)

1. Ukrainskoye otdeleniye Mashgiza.  
(Founding)



AVERBUKH, N.I.

Making large castings for reduction gears. Lit.proizv. no.6:27-28  
S '54. (MLBA 7:10)  
(Founding) (Gearing)

AYERBUKH, N.I.; MIROSHNICHENKO, F.V.

Casting one half of the face plate of a vertical boring and turning  
lathe. Lit.proizv. no.8:24-26 N '54. (MIRA 8:1)  
(Founding) (Machine tools)

~~AYERBUKH, N.I.~~  
AYERBUKH, N.I.

\*1404\* Casting of Iron Parts for Large Lathes. Otkrytyye  
nykh detal' na krupnykh stankov. (Russian.) N. I. Ayer-  
bukh. *Uchebnoye proizvodstvo*, 1955, no. 10, Oct., p. 6-11.  
Technique of casting heavy parts of large lathes and materials  
used in the process. Tables, diagrams.

18(5), 25(1)

AUTHOR:

Averbukh, N.I., Engineer

Sov/129-59-7-1/25

TITLE:

Machine Molding of Large Steel Castings

PERIODICAL:

Iteynoye proizvodstvo, 1959, Nr 7, pp 1-6 (USSR)

ABSTRACT:

The author publishes the results gained while pouring engineering castings at a Plant for Heavy Machinery (castings from 1,900 up to 14,500 tons). He lists the differences and the difficulties appearing while pouring by hand. He gives regulations for suitable molding materials being permeable for gas and mentions the importance of silicate of sodium. He describes the system of pouring by means of machines (the syphon system) and the manner of permanent mold production by means of the molding machine model 233. As a result of progress made in the field of electric arc welding, it is now possible to divide large type castings into several parts allowing by this method the pouring by machines on a far larger scale. There follows a description together with drawings for a proper division of the casting shapes. Research work done by

Card 1/2

SOV/123-59-7-1/25

### Machine Molding of Large Steel Castings

the Institute of Production Engineering "Imeni S. Ordzhonikidze" at Moscow is quoted and the economy efficiency of this manufacturing process is emphasized: According to this system 147 standard hours can be saved during each pouring cycle for tires. But it demands a new organization of the working process, i.e. pouring and assembling of the casting shapes. Conclusion: There is a possibility for an extension of pouring engineering castings by the use of the welding process for large shapes. There are 2 tables and 17 diagrams

Card 2/2

S/128/60/C00/006/003/007/XX  
A:04/A133

AUTHOR: Averbukh, N. I., Graduate Engineer

TITLE: The standardization of machine-molded steel castings

PERIODICAL: Liteynoye proizvodstvo, no. 6, 1960, 1 - 8

TEXT: The author discusses the difficulties of casting steel due to the lack of standard production methods. Rationalization of mold and core materials can be achieved by reduction of their types to a minimum. The following seven types of standard materials are suggested: (1) fast-freezing, based on sodium silicate for molds scavenged by carbon dioxide or dried with gas torch; (2) sand-clay for tops dried in drying-rooms and for inner cores; (3) fast-freezing, based on sodium silicate and containing 20% marshalite for outside cores; (4) anti-cinder containing 97% chromite for cores of castings with more than 50 mm thick walls; (5) anti-scat sand-clay with 25% marshalite for cores of castings with walls of less than 50 mm; (6) fillers mixed with 15% sand; (7) fillers with 3 - 5% sawdust for cores. The two types of anti-scat materials (6) and (7) are necessary as chromite causes blowholes in castings with less than 50 mm wall-thickness. Time is

Card 1/123

The standardization of machine-molded...

S/128/60/000/006/003/007/XX  
A104/A133

saved and the quality of castings is improved by developing an expedient pouring system and by a standardization of the relevant equipment. Chamotte pouring equipment is widely used. There are three standard-size chamotte feeders: 20 x 90, 30 x 120 and 30 x 140 mm; tubes have a diameter of 50, 75 and 100 mm. Six types of machine molded steel castings used in heavy machinery production are described and some technical data given in Table 1. Figure 1 shows an assembled shaft machine hub mold; the pouring system employed ensures the shortest possible route of metal. The assembled mold of a welded shaft flange with the same pouring system is shown in Figure 2. The vertical gap pouring system used for geared bushings shown in Figure 3 is very effective. Another figure shows the assembled mold of a driving gear frame (without reduction box). Correct casting dimensions are of primary importance since complicated shapes lead to slower shrinkage (0.8 - 1%, depending on length). Gears are cast from steels listed in Table 2. After tempering the 35X4Л (35KhNL) steel proved stronger and showed a higher resistance to wear than 40Л (40GL) steel but was more inclined to cracks which could be eliminated by anti-crack measures i. e. condenser-fitted molds, special cutting off of deadheads and thermal processing. Figure 5 shows single and double-disc toothed wheels. A detailed description of the

Card 2/123

The standardization of machine-casting...

3/10/60/000/000/007/XX  
A104/A133

molding method is given. A special casting method based on a two-level pouring system comprising two syphons and two main risers has been developed for thick and thin-walled parts such as drums of excavator hoists. Figure 8 shows four main types of castings applied in the production of bearing lids and bodies, Group 6 includes the comparatively simple casting of long and thin-walled pieces e. g. the transverse beam shown in Figure 9. Bearing lids which are molded in vertical position require a split pattern; their original construction (Fig. 10 a) has been improved as shown in Figure 10 b. Figure 11 a shows the conventional cast of a reductor body of a walking excavator and Figure 11 b the same unit completed according to the new standard casting method. There are 11 figures, 2 tables and 5 Soviet references.

Card 3/12  
3



S/128/60/000/012/002/014  
A054/A030

AUTHOR: Averbukh, N.I.  
TITLE: Vertical Slit Runner System for Steel Castings  
PERIODICAL: Liteynoye proizvodstvo, 1960, No. 12, pp. 7 - 9

TEXT: Although the vertical slit runner system was known as far back as 1928 (Ref. 3, A.G. Spasskiy: "Principles of the Foundry Industry", Metallurgizdat, 1950) it has so far been used on a small scale, mainly for thin walled aluminum and bronze castings. The Novo-Kramatorsk Engineering Works have developed the vertical slit runner system for steel castings on a large scale, with wall thicknesses between 20 and 200 mm. By reference to a typical product, a brake disc 400 mm in diameter, gross weight 380 kg, wall thickness 46 mm, made from 40 (90L) brand steel, the essential features of this system are described below. The vertical slit runner system consists of a slit shaped feeder (1) over the total height of the casting, in which the metal enters through a slit-shaped pouring hole (2) connected with feeders (3) and (4) by intermittent pouring hole (5), and through the latter with the main pouring hole (6). For the efficient operation of this runner system the speed of the metal flow from the intermittent pouring hole to the slit-shaped pouring hole has to be reduced and this is ef-

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ected by increasing its diameter about 2 times compared to that of the intermittent pouring hole. The slit-shaped feeder, half of the slit type pouring hole and the lower feeder are constructed as part of the form, while the other half of the slit type pouring hole, the upper feeder and the intermittent pouring hole as part of the core box. The core boxes supplying cores for this system are provided with replaceable inserts the height of which depends on the required height of the core. For castings up to 900 kg the diameter of the intermittent pouring hole is 40 mm and that of the slit-shaped pouring hole 80 mm. For castings above 900 kg the pouring hole diameters are 55 and 110 mm, respectively. For castings with a diameter above 800 mm the vertical slit runner system consists of two sets, for castings measuring over 2,000 mm in diameter, the runner system consists of 3 sets. The main pouring hole, into which the metal flows immediately from the ladle, consists of a pipe, 100 mm in diameter. The open character of this runner system obtained by enlarging the cross section of the slit-shaped pouring hole as compared with that of the main pouring hole, ensures uniform filling of the form from bottom upwards to the top. In this way (when disregarding factors not depending on the runner system: structure of the casting, outlay of risers, etc.), the distribution of the metal temperature is in accordance with the conditions of controlled solidification. This feature of the

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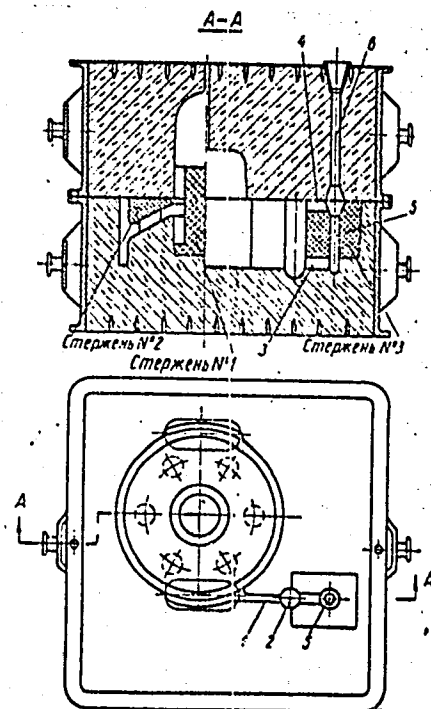
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system is important mainly for massive castings. The decrease in the speed of the metal flow during its passing from the intermittent pouring hole into the slit-shaped hole, the rising speed of non-metallic inclusions and gases being maintained, promotes the cleaning of the metal in the slit type pouring hole. Moreover, the metal does not drop into the form from a height, as is the case when the feeder is arranged at the joint line of the mold. The casting is consequently free of burrs (caused by the runner core used in conventional systems for decreasing the drop height of the metal) and there are no black spots in the casting either, due to its displacement in the mold. The metal consumption is slightly higher than in the bottom casting system. The controlled hardening in this system makes it possible for the size of risers to be reduced, however, and this offsets the increase in metal consumption. A.A. Ryzhikov (Ref. 5: "Theoretical Basis of the Foundry Industry", Mashgiz, 1954) has mentioned possibilities of saving more metal with this runner system, by rolling over the mold after pouring. An important feature of the vertical slit runner system is that it can ensure an optimum pouring time which can be calculated by the formula  $t = s_1 \sqrt{\delta G}$ , where  $t$  = optimum pouring time, in sec.,  $\delta$  = the main or average wall thickness in mm,  $G$  = the weight of the casting, including runner system and risers,  $s_1$  = coefficient depending on the technique (it is taken 1.10 for castings under 500 kg and 1.20 for castings above 1,000 kg). The analysis of actual and calculated

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pouring times shows that the number of slit-shaped feeders should be determined not only with regard to the size of the casting but the consumption of liquid metal should also be taken into account. For castings having a liquid weight above 1,000 kg, two slit-shaped feeders, i.e., two sets of runner systems should, therefore, be used. There are 4 figures, 1 table and 5 Soviet references.

Figure 1: Vertical slit runner system. 1 - slit-shaped feeder; 2 - slit-shaped pouring hole; 3, 4 - feeders; 5 - intermittent pouring hole; 6 - main pouring hole.

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Lit.proizv. no.11:7-9 N '62. (MIRA 15:12)  
(Moulding (Founding)) (Sand (Foundry))

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AUTHOR:

Averbukh, N.M.

SOV/128-59-8-27/29

TITLE:

Leningrad Regional Conference on Progressive Foundry Practice

PERIODICAL:

Liteynoye proizvodstvo, 1959, Nr 8, pp 46 - 48 (USSR)

ABSTRACT:

December 8 - 12, 1959 a conference was held in Leningrad in order to exchange views on progressive foundry practice. About 700 persons participated. G.V. Malakhovskiy, the chief metallurgist of the Leningrad gradskiy Sovmarkst, gave a general picture of the foundry industry in the Leningrad economic region. M.M. Vyshemirskiy, the chief metallurgist of the Leningrad "Stankolit" plant, spoke about progressive methods in preparing cores and casting forms. M.A. Kremer, spoke on "New trends in the theory and practice of feeding castings". Yu.A. Nekhendzi reported on the 3rd Polish Foundry Conference. V.M. Se-stopal described characteristics of Czech foundry processes. A.D. Goryachev (Kirov plant in Leningrad) described a new 200 ton press machine. I.A. Gerasimov (Kremenchug) reported on precision stamp casting

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in his factory. S.S. Yelistratov (Stalingrad) described a vacuum machine for feeding cores. J.T. Fedorova described a new drying process used for drying cores. The lectures of M.A. Kremer, K.V. Tolstikhina, P.I. Pankin, and P.I. Shportenko concerned the problems of exothermic mixtures. N.A. Tolpegin (Kirov plant in Leningrad) spoke about steel castings. I.A. Shapranov and A.A. Get'man (Scientific Research Institute) reported on an economic casting method using iron with a magnesium content; further they described a cupola furnace with a two-step heating. Ya. I. Medvedev (TsNIITMASH) spoke about gas blisters in castings and methods of elimination. O.A. Kozin ("Krasnoye Sormovo" plant) spoke on the classification of casting spoilage in manganese steel. P.P. Berg spoke on "New core materials". I.B. Kumanin (Steel Institute of Moscow) spoke about "Core materials and their influence upon castings". M.A. Kremer suggested the use of bitumin in sandblowing machines. I.V. Ryzhkov (Polytechnical Institute of Khar'kov) reported

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on grey iron castings. Prokhorov ("Krasnoye Sormovo" plant) spoke of using liquid glass in cores for V, Cr, Ni and Mo steel castings. I.V. Gruznykh (Polytechnical Institute in Leningrad) reported about optimum parameters for core-blowing of liquid-glass-cores. P.I. Shportenko said that in the Novokrematorsk plant the removal of liquid-glass-cores was regulated by a dosage of clay, saw dust and waterless colors. S.I. Chernysh gave examples of quick drying mixtures. K.I. Shanskiy (Leningrad Plant for Hoist Transportation Equipment) stated that cupola furnace slag can be used as quick drying mixtures. B.A. Noskov and A.F. Nasapkin (Politechnical Institute of Khar'kov) reported on using of betonite mixtures for cores. V.F. Kryuchkov (Leningrad Mechanical plant) and Ya. V. Zeleranskiy (Machine-Building plant) hold about the transportation of core mixtures. L.M. Mariyenbakh spoke on "Improvement of melting aggregates and of melting processes" and proposed using earth-gases for air-warming-machines. P.F. Sabaneyev (Rostsel'mash) spoke about the intention of the

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plant to increase the output of grey iron. A constructive discussion took place after the theoretic lecture of B.A. Noskov and I.N. Den'gin (Polytechnical Institute of Khar'kov) about the using of earth-gas in the furnace. Yu. G. Rozenberg and S.I. Tsukerman reported about the successful use of earth-gas in the furnaces of KhEMZ. L.N. Korchagina and R. I. Ketcheka discussed the use of such gas in the Rostov radiator plant and in the "Krasnyy Aksay" plant. On the subject of improved melting in Red China A.M. Petrishenko reported. I.I. Shapranova and E.V. Petrova (NII) informed on the modification of iron with magnesium under pressure. G.N. Golub spoke about using iron modified with magnesium in his plant. G.I. Koshovnik (Polytechnical Institute of Kiyev) reported on the homogenization of magnesium iron during annealing. M.Ya. Zaslavskiy spoke about the production of grey iron at the Nevskiy Ship Repair Plant. "Increasing the Quality of Castings from Non-Ferrous metals" was the lecture of A.F. Kolobnev and N.I. Belousov (NII) in which they gave the characteristics of the new aluminum alloys (AV 30,

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AV 300, AMg7A a.o. I.P. Yegorenkov (NIILITMASH) mentioned in his lecture "Ways to Increase Labor Productivity during the cleaning and chopping of Castings", hydraulic methods of cleaning. V.L. Tarskiy (NIILITMASH) spoke about foreign equipment. M.A. Kremer informed on cleaning steel castings with a gas flame and air-arc method. V.M. Svirskiy mentioned the shortcomings of sand-blowing tools. M.Ya. Zaslavskiy (Lengipromtrans) introduced a simple hydro-sand-spurl machine. M.V. Bromley (All-Union Scientific Research Institute for Labor Protection VTzSPS) spoke on "Hygiene-Technical Requirements of the Plans and Building of Casting Shops". V.V. Kucheruk from the same institute raised the problem of labor protection during casting in shell-cores and when preparing the cores from the liquid-glass mixtures. O.A. Ratner (Leningrad Institute for Labor Medicine and Labor Hygiene) spoke about the prevention of silicosis. At the end decisions were taken to increase labor productivity.

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[Flaws in casting, their prevention and correction] Brak  
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